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ABSTRACT

This report is an evaluation of a New York City school district educational project designed to offer bilingual instructional and supportive services to ninth, tenth, and eleventh grade high school students under funding from Title VII of the Elementary and Secondary Education Act of 1965. Its main objectives were to increase (1) the basic English skills of students in the expressive areas; (2) vocabulary and reading comprehension in English and Spanish; (3) competency in math and science; (4) student awareness of cultural heritage and ethnic background; and (5) student attendance. The target population consisted of 250 Spanish speaking boys and girls. The staff included a project director, three content area specialists, a bilingual counselor, two English as a Second Language (ESL) teachers, and a number of assistants. A native language arts teacher and an additional education assistant were included for a part of the program. There was a reduction in staff during the project as a result of a cut in the education budget. A battery of tests were administered to students both as pre and post tests. Additional assessment measures employed were uniform final examinations, a project-developed examination to assess knowledge of ethnic culture, and attendance records. Statistically significant results were reported for the majority of objectives. The statistics as well as a detailed interpretation and discussion of the results are included in the report. (Author/BS)

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EVALUATION REPORT

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ADLAI E. STEVENSON HIGH SCHOOL BILINGUAL PROGRAM

SCHOOL YEAR 1975-76

DR. STANLEY SOLES

An evaluation of the New York City school district educational project funded under Title VII of the Elementary and Secondary Education Act of 1965 (PL 89-10) performed for the Board of Education of the City of New York for the 1975-76 school year.

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Chapter 1. PROGRAM DESCRIPTION

This is a report of the evaluation of the Bilingual Program at Adlai E. Stevenson High School in the South Bronx in New York City for school year of 1975-76.

The Comprehensive Bilingual Education program at Adlai Stevenson High School in South Bronx was designed to offer bilingual instructional and supportive services to ninth, tenth, and eleventh grade high school students under funding from Title VII in the period from September , 1975 through June, 1976.

The target population consisted of approximately 250 Spanish speaking boys and girls. When tested 93 recent arrivals were found to know little or no written or oral English and were included in the program with intensive and special remedial English as Second Language (ESL) instruction. Another 157 students were identified as two or more grades behind in reading in English and they were included in the program. The basic bilingual curriculum consisted of instruction in basic school subjects in Spanish and English as a Second Language instruction.

The target population had a dropout rate in excess of fifty percent. Nearly all of these non-English speaking students are of low socio-economic status. Many of these students and their families are ineligible for and/or unaware of the various social and medical services that they may receive. As a result, the group is characterized by high absenteeism.

The program was designed to provide a model for replication by other high schools with similar problems. It was intended to be

distinctive in two ways:

1. It was to maximize use of existing tax levy and ESL teaching personnel.
2. Title VII funding was to be used solely to provide supportive services for the program and for unique instructional resources; the teaching components for Social Studies, Math and Science were to be made from tax levy funds.

The Bilingual Program constituted a parallel pattern within the school. Pupils were given academic, non-academic and skill subjects in Spanish. Students took Social Studies, Science and Mathematics in Spanish within the regular academic departments of Stevenson High School. Students were given intensive instruction in English. To achieve integration, the bilingual students simultaneously took other required courses such as Art, Music and Physical Education with the English speaking pupils in the regular program. The program offered bilingual pupils extra curricular activities such as films, museum visits, plays, speakers which were all used as a means to reinforce the cultural heritage while simultaneously introducing new culture.

The Bilingual Program provided classroom personnel as follows: three content area specialists, social studies, science and math. In support of these personnel were one bilingual counselor and four educational assistants all working under the supervision of a project director, with the assistance of a bilingual secretary. Additional personnel, from funds other than Title VII consisted of two ESL Teachers and two educational assistants (Title I), while three teachers, math,

science and social studies were funded by tax levy. For Spring 1976 one Native Language Arts teacher and one Educational Assistant were added.

The program and evaluation were conducted within the social context of the fiscal and budgetary crisis of New York City and New York State during 1975-76. This unprecidented crisis had direct and indirect impact upon school programs. There were direct results of the fiscal crisis upon the Bilingual Program at Adlai E. Stevenson High School.

In 1975-76 the opening of the school year was plagued with a series of new reversals. A series of cutbacks in teaching staff and materials had impact upon the program. Contract negotiation led to a teacher strike which delayed the opening of schools for five days. As a result of these considerations and other events throughout the school year, there were repercussions of the fiscal and budgetary crisis. There were a number of changes of staff during the school year 1975-76. The tax levy element of the program was hard hit by the fiscal budget crunch. Some of the program consequences from the austerity program led to fewer fully-licensed bilingual teachers and a delay in teaching and evaluation and reorganization of the bilingual program with remaining resources. In this context, the Bilingual Program was carried out.

The program objectives for Adlai Stevenson High School Bilingual Program were listed as follows:

Program Objective No. 1: To increase the basic English Language skills of students in the expressive areas at least one level or increment.

Program Objective No. 2; To increase the vocabulary and reading comprehension in English of students by six school months or .6 of a school year.

Program Objective No. 3: To improve the reading ability of Hispanic students in the Spanish language to a statistically significant degree.

Program Objective No. 4A: To increase the general science achievement of students.

Program Objective 4B: To increase the Biology achievement of students.

Program Objective #5A: To increase the achievement General Mathematics, of students.

Program Objective #5B: To increase the Algebra achievement of students.

Program Objective #6: To increase the knowledge by ninth grade students of their cultural heritage and ethnic background.

Program Objective #7: To increase the attendance of students.

Program Objective #8. To determine how the program operations compared to program description and any discrepancy between the proposal and actual operations.

Chapter II. EVALUATION OBJECTIVES AND PROCEDURES

Evaluation Objectives

The evaluation objectives are parallel to the respective program objectives for the Bilingual Program of Adlai Stevenson High School. They may be listed precisely as follows:

Objective 1. To determine if there was a statistical significant improvement of Spanish speaking students in their ability to speak English. It was expected that 75 percent of the students will gain for the year at least one scale rating in both the expressive and receptive modes when post test results of the New York City Language Fluency Scale are submitted to analysis. The treatment group consists of all Title VII pupils receiving instruction in English as a Second Language (ESL) in the Bilingual Program.

Objective 2. To determine if the Spanish speaking students demonstrated a statistical significant improvement in reading achievement in English. It was expected that the mean posttest reading score achieved by the treatment group will surpass their pretest score at the .05 level of statistical significance when results of the Stanford Achievement Test in Reading are submitted to analysis with a *t* test for correlated groups. The treatment group consists of all Title VII pupils in the Bilingual Program receiving English as Second Language (ESL) instruction.

Objective 3. To determine if there was statistically significant improvement in Spanish speaking students reading in Spanish. It was expected that the mean posttest reading score achieved by the treatment group will surpass their pretest score at the .05 level of statistical significance when results of the Cooperative Inter-American Series Reading Comprehension Test are submitted to analysis with a *t* test for correlated groups. The treatment consists of all Title VII pupils receiving subject matter instruction in their native language (Spanish) in the Bilingual Program.

Objective 4. To determine if the students in the Bilingual Program attain achievement in science school subjects at or above the scores of a comparable group of students in the regular program of the school.

Objective 4A. It was expected that the percentage of treatment group of Bilingual Program students who passed the teacher-made or other uniform final examination in general science would at least equal that percentage of selected non-treatment students in general science. The treatment group consisted of all Title VII pupils in the Bilingual Program receiving subject matter instruction in their native language. The comparison group consisted of a randomly selected group of pupils who received the identical curriculum in the English language in the regular school program.

Objective 4B. In regard to Biology classes from the two programs a Null hypothesis of no difference was posed. The Null hypothesis was to determine whether as a result of participation in the Bilingual program there was no difference between the percentage of students in the Bilingual program passing a City-Wide Biology examination translated in Spanish and the percentage of comparable English-dominant students passing a City-wide Biology examination within the school. All participants complete the Biology sequence in January and June, 1976.

Objective 5. To determine if the participants in the Bilingual Program attain achievement in Mathematics at the same level or above a comparable group of students from the regular programs of the school.

Objective 5A. It was expected that the percentage of treatment group students in the Bilingual Program who passed the teacher-made or other uniform final examination in General Mathematics did at least equal that percentage of selected non-treatment students in General Mathematics. The Bilingual group consisted of all Title VII pupils receiving General Mathematics subject matter instruction in their native language. The Comparison group consisted of a randomly selected group of pupils who received the indentical curriculum in the English language.

Objective 5B. In regard to students who took Algebra an effort was made to determine whether as a result of participation in the program there were no differences between the percentage of students in the program passing a City-Wide Algebra examination in Spanish and the percentage of comparable English dominant students who passed a City-Wide Algebra examination from the school. The treatment group consists of all students in the Bilingual Program completed the one semester Algebra sequence in January and June, 1976. The comparison group consisted of a randomly matched sample of Algebra students from the regular school program.

Objective 6. To determine if the participants in the Bilingual Program showed significant gain in knowledge of Ethnic culture upon completion of a course especially designed for the course.

It was expected that at least sixty percent of the treatment group would attain at least the criterion level set for passed subject content when posttest results of teacher-made final examinations in Ethnic Culture were submitted to analysis. The treatment group consisted of all Title VII pupils in ninth grade receiving instruction in Latin America area studies.

Objective 7. To determine if the attendance rate for the participants in the Bilingual Program was higher than the students in the regular program.

It was expected that the rate of attendance achieved by the treatment group would surpass the Comparison group at the .05 level of statistical significance when pupil attendance results were submitted to analysis with a t test for percentage difference for uncorrelated groups. The treatment group consisted of all Title VII participants in the program. The Comparison group consisted of all pupils in the school.

Objective 8. To determine how program operations compared with the program description. The evaluator assessed the Bilingual Program so as to determine gaps between the program as described and as actually carried out and studied the various processes used in program operation.

Table 1

Objectives, Testing Instruments, Testing Dates, Groups Tested and Number of for Stevenson High School Bilingual Program

Obj. #	Objective Improvement of:	Testing Instrument	Pre-Test	Post Test	Groups Tested	Number Tested
1	Oral English	New York City Puerto Rican Language Fluency Scales A & B	Oct	May	All Title VII Students in ESL	105
2	Reading in English	Stanford Achievement Test Form B Primary II & III	Oct	May	All Title VII Students in ESL	93
3	Reading in Spanish	Cooperative Inter-American Tests LCES- and DRS	Oct	May	All Title VII Students	185
4	Science	A) General Science B) Biology	Jan Jan	June June	Title VII in Classes vs. Matched Sample From Regular Program	
5	School Subjects Mathematics	Uniform final exams: A) General Math & B) Algebra	Jan Jan	June June	Title VII in Classes vs. Matched Sample From Regular Program	
6	Knowledge of Ethnic Culture	Project-Developed Examination	Dec	May	Title VII Students Ninth Grade Only	52
7	Attendance	Bilingual vs. Regular Program Students Attendance Records		June	All Title VII Students vs. Rest of School	195

Methods of Analysis

The design stipulated the use of a series of statistical procedures for the analysis. These included (1) the correlated t test between pre and posttests with a level of significance of .05; (2) the t test of differences between percentage or proportions comparing the Bilingual Program results with schoolwide norms; (3) the Wilcoxon Sign test of significance of differences between pre and posttest ratings on the language rating scale; (4) compare the percentage distribution of the attendance rates in terms of percent of attendance rate for the Bilingual Progarm and the school as a whole.

A systematic sample was drawn using a table of random numbers from the alphabetical class lists from the regular program which is equivalent to a simple random sample* to match the regular class students to the bilingual program students. An overall summary of the evaluation objectives types of instruments used in the assessment, and types of statistical analysis used are listed in Table 2 to follow.

In addition to the formal methods of research, informal observation, interviews with staff and students were held. An analysis of records and documents was carried out.

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*Hubert M. Blalock, Jr. Social Statistics, New York McGraw Hill 1972 page 514.

Table 2

Objectives, Testing Instruments and Statistical Analysis Used in Stevenson High School Bilingual Program

Obj. #	Objective Improvement of	Testing Instruments Used	Statistical Analysis Used
1	Oral English	New York City Language Fluency Scales A & B	Wilcoxon Sign Ranks Test
2	Reading in English	Stanford Achievement Test Form B Primary II or III	Correlated T Test
3	Reading in Spanish	Cooperative Inter-American Tests LCES and DES	Correlated T Test
4	Science	A) General Science B) & Biology	T Test for Independent Groups Systematic Sample Regular Classes with Bilingual Classes
5	School Subjects Mathematics	Department and Citywide Teacher-made final exams: A) General Math & B) Algebra	
6	Knowledge of Ethnic Culture	Project Developed Examination	Frequency Distribution Percent Passing Final Exam in Line with Criterion
7	Attendance	Bilingual vs. Regular Program Students Attendance Records	T-Test for Differences in Percent

Chapter III. FINDINGS

The findings of the evaluation of the Bilingual Program for Adlai Stevenson High School for school year 1975-76 will be reported in this section for each respective evaluation objective as listed in the evaluation design.

Objective 1. It was expected that at least seventy-five percent of the entire treatment group would improve at least one scale rating in both the expressive and receptive modes when post-test results of the New York City Language Fluency Scale were submitted to analysis. The treatment group consisted of all Title VII pupils receiving instruction in English as a Second Language (ESL). The ability to speak English was measured by the New York City Language Fluency Scales A and B. In the Bilingual Program, 105 ESL students were given a pre-test or post-test rating. The results were analyzed by the Wilcoxon Sign Test for categorical data. Of the 105 students, there were 28 students who were rated at the lowest level ("F") on the pre-test, by the end of the semester, ten pupils or 35.7 percent had improved two or more levels. There were 75 students who gained one or more levels on Scale A or 73 percent, while 73 students or 74 percent on Scale B.

Table 3

Wilcoxon Sign Test of Significance for Students at Stevenson High School for Ability to Speak English on New York City Language Fluency Scales A & B

		Students' Results on Pre-Post Ratings			
Scale	N	Gain of One or more Levels	Loss of One or more Levels	Remained on the same Level	Wilcoxon R
A	105	75	8	22	6.536
B	105	77	8	20	6,634

Of the 105 ratings of students who completed the Scale B language ratings, the sum or positive rank was 3346 and negative ranks 309. The Wilcoxon R for the Sign Test was 6.634 which was significant at the .05 level.

Objective 2: It was expected that the mean post-test reading score achieved by the treatment group at Stevenson High School would surpass their pre-test score at the .05 level of statistical significance when results of the Stanford Achievement Test in Reading were submitted to analysis with a T test for correlated groups. The treatment group consisted of all Title VII pupils receiving instruction in English as a Second Language (ESL).

There were 93 completed valid sets of Stanford Achievement tests used to assess the students' achievement in reading English. The mean pre-test score was 2.325 grade equivalent scores and the mean post-test score was 3.011 or a difference of .69. This difference was above the criterion of .60 established in the proposal. Regarding the T-test, the sum of differences was 63.8 and the sum of the square of the differences was 56.58. The T-test score was 17.98 which was significant at the .05 level for 92 df. Of the 93 students from the Bilingual Program, 60 or 64.5 percent gained over half a year in grade equivalent. The objective was attained.

Table 4

T Test of Significance for Stevenson High School Bilingual Program --Stanford Achievement Test in Reading

N	Pretest Mean	Posttest Mean	X_D	S_D	t
93	2.325	3.0118	63.8	56.48	17.798

Objective 3. It was expected that the mean posttest reading score achieved by the treatment group would surpass their pretest score at the .05 level of statistical significance when results of the Cooperative Inter-American Series Reading Comprehension Test in Spanish were submitted to analysis with a t test for correlated groups. The treatment group consisted of all Title VII pupils receiving subject matter instruction in their native language (Spanish).

Of the 240 students in the Bilingual Program there were 185 valid completed sets of tests in the Cooperative InterAmerican Series Reading Comprehension Test in Spanish Pruebas de Lectura.* This was 77 percent of the pupils. The mean score for the pretest was 37.64 and the posttest mean score was 52.01 with a difference of 14.4 the sume of the differences was 2657. The sum of squares of differences was 58487. The standard deviation was 17.78. The T test was 18.586 which was significant at .05 level for 184 df.

Table 5

T Test of Significance for Reading in Spanish for Spanish Dominant Students at Stevenson High School Bilingual Program

N	Pretest Mean	Posttest Mean	X_D	S_D	t
185	37.643	52.010	2657	58487	18.586

*Intermediate Level of Forms DES and CES were used.

Objective 4. To determine if the students in the Bilingual Program attain achievement in school subjects in science at least equal to or above the attainment of a comparable group of students in the regular program of the school.

Objective 4A. It was expected that the percentage of treatment group of Bilingual Program students who passed the teacher-made or other uniform final examination in General Science would at least equal that percentage of selected non-treatment students in general science. The treatment group consisted of all Title VII pupils in the Bilingual Program receiving subject matter instruction in their native language. The comparison group consisted of a randomly selected group of pupils who received the identical curriculum in the English language in the regular school program.

The analysis of results from the final examinations for the students in the General Sciences courses for Bilingual students was compared with a matched sample of students from regular General Science classes. The T-test for independent groups was calculated and revealed a T-test of 2.4116 which was significant for at .05 level for 188 df. Of the 95 pupils in Bilingual General Science, 41 or 43 percent passed the final examinations while there were 34 or 36 percent of the sample of students from the regular General Science classes who passed.

Table 6

Test of Significance for Indpendent Groups for Bilingual Classes and Regular General Science Classes at Adlai Stevenson High School--January

	N	Post test Mean	df.	t
Bilingual	95	60.863	188	
Regular	95	54.81		2.4116*

The analysis of results from the final examinations given to 64 students from the Bilingual Program in various courses in General Science was made with a matched randomly selected group of results from comparable courses in type and level from the regular program. The T-test for independent groups was calculated at 1.42 with 126 df. which was not statistically significant.

Table 7

Test of Significance for Independent Groups for Bilingual Classes versus Regular Classes in General Science at Stevenson High School -- June

Classes	N	Final Examination Mean	df.	t
Bilingual	64	47.87	126	1.423
Regular	64	52.69		

There were 20 students of the 64 in the Bilingual Program or 31 percent of the students who got a score of 65 or better on the final examination. Since one criterion established for this objective was that 60 percent of the students in the Bilingual Program would pass the final examination*. Only 31 percent passed , so in terms of this criterion the objective was not attained. The mean score for the group of students from the regular program was higher than the bilingual group; however, the differences were not statistically significant. Of the 64 students from the sample of the regular program classes, 33 or 51 percent passed the final. While the students in the Bilingual Program did not pass the final examination or attain the sixty percent criterion level, the mean performance score of students in the Bilingual Program was not significantly different from the students in the regular program. The two groups were basically equal in their performance for this objective.

*The 60 percent criterion was stated as a program objective.

Objective 4B. In regard to Biology classes from the two programs a Null hypothesis of no difference was posed. The Null hypothesis was to determine whether as a result of participation in the Bilingual program there was no difference between the percentage of students in the Bilingual Program passing a City-Wide Biology examination translated in Spanish and the percentage of comparable English-dominant students passing a City-wide Biology examination within the school. All participants complete the Biology sequence in January and June, 1976.

The analysis of the final examination scores for the bilingual program were matched by systematic sample from table of random numbers with students in the regular classes in biology. The T-test for independent groups was calculated and revealed a T-score was equal to 1.542 which was not significant at .05 level with 208 df. Of the 105 students, 49 or 47 percent passed in January from the Bilingual Program whereas from the 105 sample from the regular Biology classes 53 or 50 percent passed. Neither group reached one of the established criterions (60 percent passing)

Table 8

Test of Significance for Independent Groups for a Matched Sample of Spanish Dominant Students and Regular Classes in Biology at Stevenson High School - January, 1976

Biology Classes	N	Biology Post Test/Mean	df.	t
Bilingual	105	55.97	208	1.54
Regular	105	59.188		

The analysis of final examination scores given in June 1976 for the students in Biology courses for Bilingual Program students

were compared with a group of students from the regular Biology classes using a systematic sample to randomly match students. The T-test for independent groups was calculated at 1.70 which was not significant for the .05 level with 122 df. For the results see Table #9 below. Of the 62 students from the Bilingual program, 39 or 62 percent got passing scores on the final examinations. This was above one criterion (60percent passing). In the regular program, 32 students or 52 percent passed the Biology final examination.

Table 9

Test of Significance for Independent Groups for Bilingual Classes versus Regular Classes in Biology at Stevenson High School - June, 1976

Classes	N	Final Examination Mean For	df.	t
Bilingual	62	68.85	122	1.70
Regular	62	64.52		

For Objective 4, comparisons between the results of final examinations for Fall semester 1975 and Spring 1976 indicated that the objective was achieved in a comparative sense. In General Science, results showed that students from the Bilingual Program did significantly better than the sample of students in the regular program. In the Biology courses the students in the Bilingual Program did not do significantly better than the sample from the regular program. The Bilingual Program students got higher scores in June, but not in January. However, in neither case were the differences significant. Therefore, the Bilingual Program students did equally well with the students from the regular program. The standard for the objective, however, was not achieved.

Objective 5. To determine if the participants in the Bilingual Program attain achievement in Mathematics at the same level or above a comparable group of students from the regular programs of the school.

Objective 5A. It was expected that the percentage of treatment group students in the Bilingual Program who passed the teacher-made or other uniform final examination in General Mathematics did at least equal that percentage of selected non-treatment students in General Mathematics. The Bilingual group consisted of all Title VII pupils receiving General Mathematics subject matter instruction in their native language. The Comparison group consisted of a randomly selected group of pupils who received the indentical curriculum in the English language. A systematic sample was drawn using a table of random numbers from the alphabetical class lists from the regular program which is equivalent to a simple random sample to match the regular class students to the Bilingual Program Students.*

The results of the analysis of the T-Test for independent groups showed a mean for the Bilingual Group of 54.3 and the mean for the students from the regular General Mathematics classes of 54.9. The difference between means was .583. The T-test was .212 for 214 df. was not significant at the

*See Hubert M. Blalock Social Statistics, New York, McGraw Hill, page 514.

.05 level. An analysis of the results showed that 37 students in the Bilingual group or 34 percent attained passing final examination scores, while 40 students or 37 percent of the students passed the final in the regular classes. In June, results were equal, 20 students or 31 percent from the Bilingual and regular passed the final. The results showed that the students in the Bilingual Program General Mathematics classes and regular program classes attainment were not significant. Since the objective was to find out if the groups were equal or differed significantly, the objective was obtained, since they did not differ at a level of statistical significance.

Table 10

Test of Significance for Independent Groups for Bilingual Classes versus Regular Classes in General Mathematics at Stevenson High School* - January

Classes	N	Final Examination Mean	df	t
Bilingual	108	54.324	214	0.583
Regular	108	54.907		

Table 11

Test of Significance for Independent Groups for Bilingual Classes versus Regular Classes in General Mathematics at Stevenson High School** June

Classes	N	Final Examination Mean	df	t
Bilingual	64	47.875	126	1.423
Regular	64	52.687		

*General Mathematics included 69 from Mc 1 and 39 from MC 2.

**General Mathematics included 32 from MC 1 and 32 from MC 2.

Objective 5B. In regard to students who took Algebra, an effort was made to determine whether as a result of participation in the program there were no differences between the percentage of students in the program passing a City-wide Algebra examination in Spanish and the percentage of comparable English dominant students who passed a City-Wide Algebra examination from the school. The treatment group consists of all students in the Bilingual Program who completed the one semester Algebra sequence in January and June, 1976. The comparison group consisted of a random matched sample of Algebra students from the regular school program. Using the systematic sample as equivalent to a simple random sample, a matching group was drawn from the regular Algebra classes equal to the number within the Bilingual Algebra classes.

January 1976 Final Examination Results. It was contended that there would be no differences between the percentage of students passing the City-Wide Algebra examination in Spanish as compared with the percentage passing from the regular program. The results showed that two students in the Bilingual group or 7.6 percent attained a passing City-Wide examination score and the sample of regular classes in Algebra had one student or 3.8 percent of students who passed the City-Wide Examination. The results of the analysis for independent groups revealed a mean score for the Bilingual group in Algebra examination of 47.19 while the mean for the Algebra examination for the students from the regular classes was 37.115. The difference between means was 10.07. The T-test for independent groups was found to be 1.907 for 50 df. which was not significant at the .05 level for

for a two-tail test. While the percent of students passing the Algebra City-Wide examination was slightly different, the analysis of the T-test showed that the Bilingual Algebra did significantly better than the matched sample from regular Algebra classes for January. Both groups were far below one criterion level of 60 percent passing.

Table 12

Test of Significance for Independent Groups for Bilingual Classes versus Regular Classes in Algebra at Stevenson High School - Fall 1975

Classes Group	N	Final Examination Mean for	df	t
Bilingual	26	47.19	50	1.907
Regular	26	37.11		

In June, 1976, the students took the final examination on a school wide basis in Algebra; a matched systematic sample was drawn from the regular classes. The results of the T-test for independent groups revealed a mean on the final of 39.6 for the Bilingual group, and a mean for the sample of students from the regular classes was 53.5. The difference between means was 13.9. The T-test for independent groups was found to be 4.38 for 122 df which was significant at the .05 level for the two-tail test. See the results displayed in Table 13 below.

The comparison of the two groups in terms of numbers passing the Algebra with scores of 65 or better indicated that both groups were still far below the criterion or standard. From the Bilingual Program, 11 percent of the students passed the Algebra final, while there were 18 or 29 percent who passed Algebra from the sample of the

regular program. The Bilingual Program students did better in January than in June, but the objective was not attained for Algebra for the school year. Although the results for the two groups were basically similar in January, the results for the regular classes were signifi-- cantly higher in June.

Table 13

Test of Significance for Independent Groups for Bilingual Classes versus Regular Classes in Algebra at Stevenson High School - Spring 1976

Classes Group	N	Final Examination Mean For	df	t
Bilingual	62	39.645	122	
Regular	62	53.548		4.38*

Objective 6. To determine if the participants in the Bilingual Program showed significant gain in knowledge of Ethnic culture upon completion of a course especially designed for the course.

It was expected that at least sixty percent of the treatment group would attain at least the criterion level set for passed subject content when posttest results of teacher-made final examinations in Ethnic Culture were submitted to analysis. The treatment group consisted of all Title VII pupils in ninth grade receiving instruction in Latin American area studies.

On the basis of the analysis of the results of the final examination for the 52 ninth graders who took the course in Latin american area studies there were 39 students or 75 percent who attained a passing score. It is clear that the objective was attained in the study of Ethnic Culture. The distribution of results are depicted in the Table 14.

Table 14

Distribution of Final Examination in Ethnic Culture Test for Ninth Graders in Bilingual Program

Final Examination Results	Bilingual Students
100-95	0
95-85	1
85-75	10
75-65	25
65-55	8
55-45	6
45-Below	4

Objective 7. To determine if the attendance rate for the participants in the Bilingual Program was higher than the students in the regular program.

It was expected that the rate of attendance achieved by the treatment group would surpass the Comparison group at the .05 level of statistical significance when pupil attendance results were submitted to analysis with a t test for percentage difference for uncorrelated groups. The treatment group consisted of all Title VII participants in the program. The Comparison group consisted of all pupils in the school.

To determine if students in the Bilingual Program will have a higher daily attendance rate than the rate established for the entire student body at Stevenson High School. The special nature of the Bilingual Program was expected to provide added incentives to students for attending school. It was expected that the program holding power would be reflected in terms of better daily attendance in the Bilingual Program than the regular program.

The assessment of the attendance was based upon school records for attendance pertaining to students in the Bilingual Program as well as those within the regular program. The procedures used included the attendance for the students in the Bilingual Program during the first five grading periods and the attendance for the student body as a whole during the first five grading periods (September 1976-May 1976).

A review of attendance records revealed that the attendance criteria was exceeded by the students in the Bilingual Program. The results are depicted in Table 15 and clearly show the objective was achieved. A detailed analysis of results showed the outstanding attendance record for the various subgroups in the Bilingual Program.

Using the 165 days of school attendance for the nine-month period as a basis, a summary of number of days present and days absent for each student in the Bilingual Program was collected and the data were analyzed.

As reported from records the mean percent of those present for the school year 1975-76 for Stevenson High School students in the regular program was 71.5 percent. The mean percent present for the school year 1975-76 for the Bilingual program students was 86.7 percent which was higher than the school mean. The difference in mean percent attendance between the bilingual and regular program students was found to be 15.2. A test for the significance of the differences between percent of uncorrelated groups was made. The z score was 4.611 which was significant beyond the .05 level with a two tail test. This indicates that the objective was achieved, since the attendance of the Bilingual Program was significantly higher than the regular program.

Table 15

Stevenson High School Attendance of Students from Bilingual Program and Students from Regular Program

Bilingual Program		Regular Program			
N	Percent Present	N	Percent Present	Difference	Score
195	86.	3800	71.5	15.2	4.611

Table 16

Stevenson High School Bilingual Program Distribution of Students and School Attendance

Percent Present Days for School Year		Number of Students
Between	95 and 100:	46
	90 and 95:	48
	85 and 90:	36
	80 and 85:	21
	75 and 80:	12
	70 and 75:	7
	65 and 70:	4
	60 and 65:	5
	55 and 60:	2
	50 and 55:	3
	Below 49:	3

Objective 8. To determine how program operations compared with the program description. The evaluator assessed the Bilingual Program so as to determine gaps between the program as described and as actually carried out and studied the various processes used in program operation.

The evaluator observed program activity, conducted interviews, and examined pertinent records to determine the extent of congruence between program proposal specifications and the actual implementation of the program. The evaluator observed activity and interviewed key personnel in order to determine the strengths and the weaknesses of the Bilingual Program so as to provide recommendations for recycling, planning and staff development. Two key areas of attention were staff development and curriculum development. These data are provided summarily in the final evaluation report.

There were a number of major program components that operated in addition to the cognitive objective the focus of this evaluation. The major components of the Bilingual Programs to be discussed are: (1) Fiscal Crisis and Bilingual Program for 1975-76; (2) Organization of the Bilingual Program; (3) Curriculum Development; (4) Staff Development; (5) Co-curricula and Cultural Activities; (6) Parent and Community Involvement; and (7) Testing and Number of Tests completed.

Fiscal Crisis and the Bilingual Program. The impact of the fiscal crisis was felt within the Bilingual Program with staff shifts and heavy load upon Department Chairmen. The administrative work continued, but with fewer faculty members and with larger classes, placed a burden upon all. The delay in the opening of school in September,

in effect, produced a shorter semester and the shifts in staff in Science classes had special impact.

Organization of the Bilingual Program. The Bilingual Program is in a unique position within the authority structure and organizational structure of Adlai Stevenson High School. The Director of the Bilingual Program has a small key staff of Bilingual teachers and resource members for a series of courses from the regular departments of the school. The accountability of staff is to both the regular departments and to the Bilingual Program. The Bilingual Program director is expected to coordinate through the existing Department Chairmen. The Bilingual Program is growing and the role of the Program Director is growing more complex.

Curriculum Development. During the 1975-76 School year, the staff developed bilingual curriculum in ninth grade mathematics, ESL, ninth grade Biology, United States History, Area Studies, Latin Culture. The staff developed project tests and translated materials, some into English and others into Spanish. The Counseling services for students included group sessions on a weekly basis for 20 students in Fall semester and 30 students in the Spring semester. These sessions for the non-English-speaking youth covered a range of considerations such as orienting them to New York City, and helping youth with a range of emotional problems over the school year.

Staff Development. Staff meetings were held on a regular monthly basis in the Bilingual Program. The topics discussed included: Orientation to Title VII, and the evaluation and testing responsibilities; language mix in Bilingual classes; the role of paraprofessionals;

individualized instruction; curriculum development issues; scheduling and types of classes; organization of the Bilingual Program in Stevenson High School; use of affective teaching techniques; linguistic usage in social studies and science in Bilingual classes; philosophy of bilingual education; planning field trips and follow up; and other topics. There were relatively few school-wide faculty meetings, but the overall faculty was informed about the Bilingual Program throughout the year.

Co-Curricula Activities and Cultural Events. The Bilingual Program undertook a number of field trips and other cultural events during the school year. These events were linked with the main curriculum and course objectives were tied to the field trips from various courses. The field trips included: Museum of Hispanic Society, Hayden Planitarium, American Museum of Natural History, Museo del Barrio, Independence Park in Philadelphia, College Fair sponsored by ASPIRA -New York University. Other events included music and dance and drama. The events also included Ballet Hispanico in New York City and La Carreta, as well as the movie, Los Tarantos. One event was cancelled, but the Director called the artist, Sabicas, who agreed to come directly to the high school to perform. He gave his guitar concert for the student body. The Sabicas concert was a hit with the entire school.

Parent Involvement. The parents advisory committee met monthly and aided in open house meetings with other parents and planning various cultural events of the school year. The committee reviewed the Bilingual Program, its testing program and curriculum and general Title VII provision as well as the plans for 1976-77; the parents

committee sought to get more college advising and more job placement. The parents' role in the school proved to provide support and suggestions during the year and could be more important in the future.

The Testing Program and Number of Tests Completed. The opinions about the testing program by the staff and Director included the following observations. The New York City Language Fluency scale is too subjective relying only upon teacher rating. The New York City Language Assessment Battery (LAB) is still under development. The main criticism of it is the amount of time it takes for administration. The Stanford Achievement Test in reading was standardized with norms for "white middle class English-speaking suburban youth." The Cooperative Inter-American test in Spanish Language has greater emphasis on science and other areas than has been part of the experience of the students in the program.

In 1975-76, the Title VII Bilingual Program included 157 students who were found to have scored below 21 percentile in English on the New York City LAB Language Assessment Battery, and above their English percentile score in their Spanish test results. These students were assigned to the Bilingual Program in line with the Consent degree. The New York City LAB testing took considerable staff time. In addition, to the students from the Consent degree, there were others enrolled, some volunteered for the program and still others that teachers recommended to the total of 250 students in the Bilingual Program.

The number of students tested in the evaluation and the sample of tests were within the guidelines of 75 percent of the possible sample. The variations in numbers were due to the size of enrollment

for the respective classes. For Objective No. 1, there were 105 students who were in ESL with completed scores. For Objective No. 2, there were 93 completed tests for the ESL students. For Objective No. 3, 185 students in the program took the Spanish tests, these were the 93 non-English speaking students as well as the English speaking students. For Objective No. 4, there were 95 Biology and 105 General Science students. There were 172 General Mathematics students' tests completed and 88 students who took tests for Algebra. There were 92 ninth graders who took the ethnic culture test for Objective No. 6.

IV. SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Findings Summarized

There were nine objectives to the evaluation of the Bilingual Program at Adlai E. Stevenson High School. The findings for each objective will be listed in summary fashion with brief discussion of conclusions and recommendations to follow.

Objective 1. To determine if the Spanish speaking students in the Bilingual Program showed significant improvement in ability to speak and to understand English. Results showed that a significant number of students showed gain of one or more levels in the rating used. One may infer that the objective was achieved.

Objective 2. To assess changes in reading in English for the Spanish speaking students enrolled in English as Second Language classes. Results showed that the students in the Bilingual Program did show significant gains in their reading in English during the School year. It is possible to infer that the objective of gain in reading English was achieved by the students this year.

Objective 3. To determine if the Spanish speaking students showed significant improvement in their reading in Spanish Results showed that the students did show significant improvement in reading in Spanish and the objective was achieved.

Objective 4. It was expected that students in the Bilingual program would gain in their achievement in General Science and Biology classes. The gain would be equal to the percentage of those who pass the final exam from a matched group of students for similar classes in the regular program of the school. The results showed that students in the General Science

classes in January did better in comparison with the regular classes, in June the Bilingual program students did not do better than the regular classes. This indicates that the objective was only in part achieved for General Science.

In Biology, students from the Bilingual Program in January were found to have not done as well in comparison to the pupils from Biology in the regular program on the Citywide examinations. In June the results however, showed that the students from the Bilingual Program did attain the objective in comparisons with the Biology students in the regular program on the Citywide examinations. Therefore, it is possible to state that the objectives for Biology were in part achieved, and in part were not.

Objective 5. It was expected that the percentage of passing students from the bilingual Program in various mathematics classes would be at least equal to the percent of students passing final examinations from the regular program mathematics classes. Analysis of results for General Math classes in January showed that 34 percent of the students passed, while in June 37 percent of the students passed final examinations. These figures show there were proportionally less than those passing from the regular program. Neither in January nor in June did the t test show a significant difference. Therefore, the results of the two groups were basically similar and the objective was attained.

In the Algebra classes, it was found that 4 percent passed in January compared with 8 percent of the students from the Bilingual Program. In June, 11 percent of the students passed Algebra from the Bilingual Program, while 29 percent of the students passed from the regular Algebra classes. in terms of the sixty percent criterion. But neither group attained that criterion. Since the differences in results from the two groups were not significantly different in overall performance for the school year, they were basically similar. In this respect the objective was attained.

Objective 6. It was expected that at least sixty percent of the pupils would show significant gain in knowledge of Ethnic Culture upon completion of a course in Latin Area American Studies at Stevenson High School. Results for the ninth graders who took the course showed that 75 percent passed the final examination. A comparison of pre and post test scores showed a significant gain for students. The objective was achieved.

Objective 7. It was expected that the attendance rate of the students in Stevenson High School Bilingual Program would be equal to or better than the overall school attendance. Results showed that the attendance rate for the students was better for the students from the Bilingual program than for the school as a whole. The objective was achieved.

Objective 8. It was expected that there would be some gap between description and the actual operation of the Program. The evaluator assessed the descrepancy between program description and operations but found that the major elements of the program elements were carried out as described.

In summary, the Bilingual Program achieved its objectives for improvement in speaking English (Objective #1); in reading gains in Spanish (Objective #3); and gains in knowledge of Ethnic culture (Objective #6). The program did not achieve its objective for rigorous significant gains in reading in English (Objective #2), but the students did exceed the criterion of .6 grade equivalent gain. The evaluation design called for comparing student performance for both programs for a number of the objectives. It was expected that they would be equal. In this regard, matching was made by systematic sample of students from the regular program results on final examinations and City-wide tests which compared students from comparable courses in the Bilingual Program. These results indicated that while fewer students from the Bilingual Program passed respective examinations at the criterion level than the students from the regular program, the difference in Mean scores and T test for uncorrelated groups were not significant. The results were basically equal. The Bilingual program students' scores in final examinations in Sciences (Objective #4) and Mathematics (Objective #5) were less than those of students from the regular program, but these differences were not significant. There were exceptions. Students from the Bilingual program had significantly higher attendance in terms of percent days present than the mean percent present for the school as a whole (Objective #7). This was remarkable given the generally high rate of absenteeism in the past.

Conclusions

On the basis of the findings in the evaluation of Bilingual Program for Stevenson High School it is possible to conclude that the students did achieve some of the objectives.

The results of the testing may be viewed in terms of relative gain, there are some indications of improvement among the students in the Bilingual Program. When the levels of performance are viewed in comparative terms with the norms of the youth from the larger society, it is clear that the students are far behind in grade level of performance for a number of subject areas. In terms of affective dimensions, the remarkable improvement in attendance was a sign of progress for students who had a high rate of prior absenteeism. The level of performance constitutes a continued challenge to the staff of the Bilingual program.

The place of the Bilingual Program within Stevenson High School has been developed more this year. The role of the director in relationship to the department chairman is complex. The role requires coordination and liaison among faculty who work within two types of programs. In the tight fiscal situation of New York City Schools, this year department chairmen had fewer teachers and an increase in administrative tasks. In effect, the Bilingual Program constituted another set of tasks. These point to the need for the coordination and liaison of the Bilingual Program to be increased.

The Bilingual Program at Stevenson has developed its curricula activities through school programs and field trips and through development of group counseling in the guidance of students. These efforts and others have augmented the classroom instruction and have con-

tributed to the image of the Bilingual Program within the school. There has been staff development and curriculum development within the Bilingual Program during the year which has strengthened the program by the end of the school year. The Bilingual Program has operated in relationship to the larger regular program of the school within the tense context surrounding the fiscal crisis of New York City schools. Teachers had large classes and less time to carry out special projects such as the Bilingual Program.

Recommendations

The recommendations made for the Bilingual Program of Stevenson High School are based upon the findings of the evaluation during the school year 1975-76. These recommendations pertain to the evidence gathered directly for each of the evaluation objectives and the broader goals of the program assessed during the school year. These recommendations pertain to the current operation and have implications for next year's Bilingual Program.

The efforts to concentrate upon language development be continued. It was clear that students in the Bilingual Program made progress in the Spanish language, but more attention is needed in reading in English. The ESL course work is intensive, but the development of more skills among staff and improved curriculum should be encouraged. It is recommended that the concentration on language be intensified, and more inservice staff development and curriculum development be carried out in 1976-77.

The place of the Bilingual Program within the regular program of Stevenson High School could be clarified. The status of the Director in relation to the Department Chairman should be

clarified. The present structure calls for faculty to serve two programs and lines of authority and accountability could be clarified. Clarification could minimize third party communications and would enable direct supervision and more effective inservice training to take place. At present some of the teachers may feel prior duties to their respective subject department and not the Bilingual Program.

The relationship of the Bilingual Program to the larger school could continue to be developed. It is recommended that one additional technique for inservice staff development could be to schedule presentation of the Bilingual Program during regular faculty meetings when they are held during the school year. Few faculty meetings were held this year These meetings provide a chance for issues of Bilingual Program to be openly discussed within the context of the larger faculty of the school. At the present time, the Bilingual Program is viewed functionally, more through the eyes of each department of the school than as an entity providing a parallel system within the regular school. It is recommended that another alternative to consider would be for the Director to work in liaison with the Department Chairman regarding the Bilingual Program, providing their respective inputs in the planning of staff development sessions during 1976-77 . Given the large classes and fewer teachers the staff training with the support of department is crucial.

The testing program within the school requires a great deal of staff time and student effort. It is recommended that concept of criterion based and normative based testing be developed for staff understanding. It is also recommended that in staff training that more uses of the diagnostic results of tests be utilized in the instructional program. It is recommended that guidance functions

include attention to job placement for youth as well as college preparation. It is recommended that some thought and plans be made for securing funds for a longitudinal study of the students in the Bilingual Program. The changes in attendance and other changes in affective areas may be a first step toward changes in cognitive areas. Such a study would need to be for a number of years.

The year 1975-1976 has been a year of crisis for schools and other agencies within New York City, perhaps a regular staff and stable personnel and clear direction for curriculum and staff development in 1976-77 will provide a year of less tumult and more progress in Bilingual Program.

On the basis of the evidence in this evaluation, it is recommended that the Bilingual Program be funded with the specific recommendations and comments taken into account.